

FORM PTO-1390  
(REV 12-29-99)

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY'S DOCKET NUMBER

00654759

TRANSMITTAL LETTER TO THE UNITED STATES  
DESIGNATED/ELECTED OFFICE (DO/EO/US)  
CONCERNING A FILING UNDER 35 U.S.C. 371

U.S. APPLICATION NO. (if known, see 37 CFR 1.5)

09/582522

INTERNATIONAL APPLICATION NO.

PCT/IL98/00615

INTERNATIONAL FILING DATE

17 December 1998

PRIORITY DATE CLAIMED

28 December 1997

TITLE OF INVENTION A GEL COMPOSITION FOR SKIN CARE AND PROTECTION  
AND A METHOD FOR PREPARATION THEREOF

APPLICANT(S) FOR DO/EO/US

Zeev Maor, Shaul Yehuda, Shlomo Magdassi, Assia Kogan

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
  - a. ☐ is transmitted herewith (required only if not transmitted by the International Bureau).
  - b. ☒ has been transmitted by the International Bureau.
  - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☐ A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
  - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
  - b. ☒ have been transmitted by the International Bureau.
  - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
  - d. ☐ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

**Items 11. to 16. below concern document(s) or information included:**

11. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A **FIRST** preliminary amendment.  
☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☐ Other items or information:

Form PTO-1390 (REV 12-29-99) page 2 of 2

PATENT  
ATTORNEY DOCKET NO.:00654759

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	Group Art Unit:
Maor, et al.	)	Unknown
	)	Examiner:
Serial No.: Unknown	)	Unknown
	)	
PCT No.: PCT/IL98/00615	)	
	)	
Intl. Filing Date: Dec. 17, 1998	)	
	)	
Natl. Phase Filed: June 28, 2000	)	
	)	
For:	)	
A GEL COMPOSITION	)	
FOR SKIN CARE AND	)	
PROTECTION AND A	)	
METHOD FOR	)	
PREPARATION THEREOF	)	

Box PCT  
Assistant Commissioner for Patents  
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Dear Sir:

Prior to examination on the merits in the national phase,  
Applicant respectfully submits this Preliminary Amendment for the  
above identified application.

The amendments herein refer to the application as amended and annexed pursuant to the International Preliminary Examination Report submitted by the International Bureau.

In the Specification

Please AMEND the specification as follows.

On page 1, line 1, before "FIELD OF THE INVENTION" please insert the following new paragraph:

--This application is made pursuant to 35 U.S.C. §371 of international application number PCT/IL98/00615, filed December 17, 1998, with a priority date of December 28, 1997.--

On page 5, line 2, after "DETAILED DESCRIPTION OF THE INVENTION" please insert the following new paragraph:

--These and other features and advantages of the invention will be apparent upon consideration of the following detailed description of the preferred embodiment of the invention, taken in conjunction with the appended drawings.--

On page 9, lines 9, 18 and 26, please delete "up".

On page 9, line 27, at the end of the specification, please insert the following new paragraph:

--It will be apparent to those skilled in the art that various modifications and variations can be made in the various embodiments of the invention without departing from the spirit or scope of the invention. Thus, it is intended that the present invention include modifications and variations that are within the scope of the appended claims and their equivalents.--

On page 10, line 1, please delete "CLAIMS" and insert therefor --What is claimed is:--.

In the Claims

Please AMEND the claims as follows.


In Claim 1, line 1, please delete "12" and insert therefor --30--.

Remarks

Applicant has amended his application herein to conform the international application with U.S. patent rules. Applicant respectfully submits that no new matter has been entered and claims 1-8 are in condition for allowance. Applicant respectfully requests that the Examiner enter this Amendment.

The Commissioner is hereby authorized to charge any additional fees (or credit any overpayment) associated with this communication to our Deposit Account No. 13-0019. If a fee is required for an extension of time under 37 C.F.R. §1.136 not accounted for above, such extension is requested and such fee should also be charged to our Deposit Account.

Respectfully submitted,



---

Daniel H. Shulman  
Attorney for Applicant  
Reg. No. 45,106

MAYER, BROWN & PLATT  
P.O. Box 2828  
Chicago, Illinois 60690-2828  
312-701-8773

Dated: June 27, 2000

A GEL COMPOSITION FOR SKIN CARE AND PROTECTION AND A METHOD FOR  
PREPARATION THEREOF

### Field of the Invention

The present invention generally relates to a gel composition useful for skin care and protection, and to a method for its preparation. More specifically, the present invention relates to a novel liquid gel composition comprising up to 80% w/w Dead Sea water and hydrophobic or hydrophilic active agents, such as vegetable oils, free fatty acids, vitamins, humectants,  $\alpha$  - hydroxy acids, anti irritant agents, plant extracts, moisturizing agents and hydrolyzed plant proteins, or any combination thereof.

The gel composition of the present invention provides a vehicle of highly concentrated Dead Sea minerals and active agents to the skin preferably in the form of a clear gel.

### Background of the Invention

The skin, which is composed of three layers differing in their cell types and special functions; an overlying epithelial layer (epidermis), an underlying connective tissue matrix (dermis) and adipose tissue (hypodermis), is the largest organ in the body and serves as, *inter alia*, a protective barrier from the external environment, impeding the entry of microorganisms, absorption of radiation and loss of water.

Physiologists assume that specific ions from minerals play important roles, mainly in the metabolism of healthy skin, mainly as co factors in enzymatic regulation activities. For example, there are indications that  $Mg^{+2}$  is a co factor for phosphate transferring enzymes and participates in cAMP/cATP regulation.  $Ca^{+2}$  is thought to regulate cell membrane permeability and  $K^{+}$  to enhance  $CO_2$  transport. Also,  $Zn^{+2}$  may participate as a co factor in cell proliferation enzymatic regulation. In some *in vitro* and *in vivo* tests magnesium bromide, magnesium chloride, and potassium

bromide exhibited inhibition of skin cell proliferation after dermal application (Ma'or Z., Magdassi S., Efron D. and Yehuda S. (1996) *Israel Journal of Medical Sciences* 32(supp.3), 28 - 35) .

Minerals are capable of restoring moisture due to their hygroscopic characteristics. Minerals, if absorbed into skin cells, may enhance intracellular water capacity, and add water to the skin tissue from within.

Minerals may be absorbed into the skin from brine, from a bath with dissolved salts, or from dermal application of a mineral rich preparation. The skin is a multilayered biomembrane with certain absorption characteristics. As a dynamic living tissue, its absorption parameters are susceptible to constant changes. When applying a cosmetic blend, the most relevant parameter is the concentration cascade between each specific dissolved ion, outside and inside the skin surface. During the absorption process, a partitioning of minerals from the vehicle to skin may occur. The nature of the vehicle, namely the type of cosmetic preparation (e.g. a lipophilic cream or a hydrophilic gel), is significant in determining the kinetics of the process of skin penetration.

About 4 -5% of the human body is made up of minerals. Some skin disorders are related to a specific mineral shortage. It is assumed that specific ions from minerals play an important role in healthy skin metabolism.

The Dead Sea is the richest natural mineral source in the world, with a concentration of 32% (w/v) dissolved minerals and a unique composition.

The main elements found in Dead Sea water are chlorine, magnesium, sodium, calcium, potassium and bromine. For example, the concentration of chlorine in the Dead Sea is 224900 mg/l as opposed to 22900 in the Mediterranean and 19000 in typical ocean water. Magnesium is 44000 mg/l in the Dead Sea as opposed to 1490 and 1350 in the Mediterranean and ocean, respectively. Sodium is 40100 mg/l in the Dead Sea as opposed to 12700 and 10500 in the Mediterranean and ocean, respectively. Calcium is 17200 mg/l in the Dead Sea as opposed to 470 and 400 in the Mediterranean and ocean, respectively. Potassium is 7650 mg/l in the Dead Sea as opposed to 470 and 390 in the Mediterranean and ocean, respectively and bromine



is 5300 mg/l in the Dead Sea as opposed to 76 and 65 in the Mediterranean and ocean, respectively.

Many people, after bathing in the Dead Sea's salty water, reported a "baby smooth skin" feeling, and it is well known that minerals from the Dead Sea, as sea water, sea bath salts or sea mud have cosmetic and therapeutic effects on the skin (for example see Ma'or Z. and Yehuda S. (1997) *International Journal of Cosmetic Science* 19:105-110). However, treatment with these minerals has several drawbacks. It may be quite expensive and inconvenient for patients to travel to the Dead Sea itself for receiving treatment, and bringing the minerals to the patient's home may prove to be inconvenient. Large amounts of mineral ingredients (10kg Dead Sea mud or salts for each treatment) must be applied and the treatment may be messy (such as treatment with Dead Sea mud). Furthermore, domestic metal pipes may be corrosively attacked while taking a highly concentrated mineral bath.

Many Dead Sea cosmetic preparations sold today actually contain a very small amount of minerals due to technical difficulties in using the highly electrolyte concentrated Dead Sea solutions in cosmetic formulation and due to product stabilization.

The present invention offers a highly concentrated Dead Sea mineral gel which is a superior vehicle of minerals and hydrophobic and hydrophilic active agents that have beneficial effects on the skin, to the cosmetic preparations sold today.

The composition of the present invention has the benefits of treatment with Dead Sea minerals, but non of the drawbacks. It is easy and simple to use and in contrast with the treatments used today, may be in prolonged contact with the skin, enhancing the beneficial effects of the Dead Sea minerals.

### Summary of the invention

The present invention relates to a gel composition useful for skin care and protection comprising up to 80% w/w Dead Sea water, hydrophobic and/or hydrophilic active agents, solubilizers, gelling agents or viscosity modifiers and water to complete up to 100%. Preferably, the composition is a clear liquid gel.

In the composition of the present invention the hydrophobic active agents may be vegetable oils, free fatty acids or vitamins, or any combination thereof and the hydrophilic active agent may be humectants,  $\alpha$  - hydroxy acids, anti irritant agents, plant extracts, moisturizing agents or hydrolyzed plant proteins or any combination thereof. The gel may further comprise antioxidants and fragrances.

The present invention further relates to a method for the preparation of the said composition, comprising;

- a) heating the mixture of hydrophobic active agent and solubilizer to approximately 40°C while mixing; adding a mixture, at room temperature, of 15%w/w water and 30.0% w/w Dead Sea water, and heating again to approximately 40°C while mixing;
- b) in a different receptacle mixing the remaining water, Dead Sea water and gelling agent and heating to approximately 60°C while mixing, cooling to 40°C after receiving a clear solution;
- c) adding the product of step b) to the product of step a) while mixing, and cooling to room temperature.

According to specific requirements, a) may further comprise a prior step of adding antioxidants and/or fragrance to the hydrophobic active agent and solubilizer, and step b) may further comprise adding the hydrophilic active agent together with the gelling agent and the remaining water and Dead Sea water.

## Detailed description of the invention

The present invention relates to a composition comprising up to 80% Dead Sea water, hydrophobic and/or hydrophilic active agents, solubilizers and gelling agents or any viscosity modifiers for care of skin conditions, such as wrinkles, - for retaining skin moisture, and for care of skin related diseases.

The nomenclature used in the present invention to describe agents and compounds used in the present compositions, is the INCI nomenclature.

Hydrophilic active agents which may be used in the composition of the present invention may be humectants, such as glycerin, glycereth - 7 or 12 or 26, butylene glycol, propylene glycol, panthenol, sorbitol and sorbitan laureth, or  $\alpha$  - hydroxy acids, such as citric acid, lactic acid, glycolic acid and malic acid or anti irritant agents, such as allantoin, PEG - 28 or PEG - 82 glyceryl stearate or plant extracts, such as aloe barbadensis extract or gel, balm mint extract, Calendula officinalis extract, Fenugreek extract, Ginseng extract, Horse chesnut extract, Ivy extract, Jujube extract, Matricaria extract and Witch hazel extract, or moisturizing agents, such as sodium hyaluronate, sodium PCA, sodium lactate, glycolipids, ceramides, sphingolipids and phospholipids and hydrolyzed plant proteins, such as hydrolyzed soy protein, hydrolyzed silk protein, hydrolyzed wheat protein, and hydrolyzed rice protein.

Hydrophobic active agents which may be used in the composition of the present invention may be vegetable oils such as avocado oil, borage oil, evening primrose oil, jojoba oil, palm kernel oil, rosehip oil, sunflower oil and wheat germ oil, or free fatty acids that are useful as moisturizers, such as ascorbic acid, linoleic acid and linolenic acid, or vitamins useful for treating skin aging effects such as ascorbyl palmitate, retinol, retinyl acetate, retinyl palmitate, retinyl propionate, tocopheryl acetate and tocopheryl linoleate.

The gelling agents which may be used in the present invention are: Guar gum, hydroxyethylcellulose, hydroxypropyl methylcellulose, methylcellulose, magnesium aluminum silicate and xanthan gum, though any appropriate viscosity modifying substance may be used.

The solubilizers used in the present invention are nonionic compounds such as tween-20 or 80, oleth - 20, ceteth -20 and PEG-hydrogenated castor oils -36,40,60.

The composition of Dead Sea minerals is unique. The concentration of divalent cations, magnesium and calcium is very high in comparison with other sea water and the ionic strength of the solution is very high. The TDS (Total Dissolved Salt) value of Dead Sea water varies between 25% and 40 depending on the depth and location from which the water is taken.

The major constituents of Dead Sea Water referred to in the present invention, as assessed by a water analysis carried out by the Geological Survey of Israel, are:

Calcium (Ca+2)	36000 - 40000 mg/l
Chloride (Cl-)	320000 - 370000 mg/l
Magnesium (Mg+2)	90000 - 95000 mg/l
Potassium (K+)	1300 - 1500 mg/l
Sodium (Na +)	1500 - 2500 mg/l
Bromide (Br-)	11000 - 12000 mg/l

In the present invention the term "Dead Sea water" relates to saline water with a TDS value between 25% and 40% and having an ion composition in the ranges given above.

The composition of the present invention comprises Dead Sea water, hydrophobic or hydrophilic active agents, or any mixture thereof, gelling agents or any other viscosity modifiers a solubilizer and water, preferably, deionized water.

The said composition may further comprise anti oxidants and fragrances. The antioxidants may be BHA, BHT, tocopherol, tetrasodium EDTA or any combination thereof and the fragrance may be synthetic fragrances or an aromatic oil such as lavender oil, patchouli oil and sandalwood oil or any combination thereof.

AMENDED SHEET

[illegible]

Dead Sea water	30.0 - 80.0% w/w
solubilizer	up to 4.0% w/w
hydrophilic active agent	up to 3.0% w/w
gelling agent	0.7 - 1.2% w/w
hydrophobic active agent	up to 0.8% w/w
fragrance	up to 0.4% w/w
anti oxidant	0.05 - 0.2% w/w
deionized water	to complete to 100% w/w

The present invention further relates to a method for the preparation of the said composition. The basic method comprises the following steps:

- a) heating the mixture of hydrophobic active agent and solubilizer to approximately 40°C while mixing; adding a mixture (at room temperature) of 15% w/w water and 30.0% w/w Dead Sea water, and heating again to approximately 40°C while mixing;
- b) in a different receptacle mixing the remaining Dead Sea water, water and gelling agent and heating to approximately 60°C while mixing, cooling to 40°C after receiving a clear solution;
- c) adding the product of step b) to the product of step a) while mixing, and cooling to room temperature.

Further additions, to the basic formula of Dead Sea water, hydrophobic active agents, solubilizer and water, according to specific requirements, comprise a prior step of adding to the above mentioned step a) anti oxidants and/or fragrances together with the hydrophobic active agent and solubilizer, and step b) further comprises adding the hydrophilic active agent together with the gelling agent (or any other viscosity modifier) and the remaining water and Dead Sea water.

The composition prepared according to this method may be used as a substitute for bath salts, and the reported "baby smooth skin" feeling when using Dead sea water is achieved without having to use large amounts of salts, and without exposing the domestic pipes to the corrosive effect of these salts. The present composition offers the added benefit of being able to "wear" the composition on the skin for many hours, thus being exposed to the benefits of the Dead Sea minerals for a longer time, enhancing their action towards skin care and protection.

The method of the present invention achieves solubilizing a hydrophobic agent in water which is highly concentrated with salts. Furthermore, the composition of the present invention is unique in that it may be a clear, transparent gel.

Transparency of the gel has important esthetic benefits; the clear transparent product may be sold in a transparent package showing off the homogeneity of the product. Also, colored active agents may be added to the gel for beauty in an encapsulated form.

Therefore, the composition of the present invention provides a superior vehicle of highly concentrated Dead Sea minerals and hydrophobic or hydrophilic active agents to the skin in the form of an esthetically superior clear gel.

The said invention will be further illustrated by the following examples. These examples do not intend to limit the scope of the invention but to demonstrate and clarify it only.

### Examples

The following formulas of the present composition were prepared, formed a gel and were found stable for 4 weeks at 45°C. Formula I formed a clear transparent gel.

(the nomenclature used in the following examples are INCI names ):

**Formula I**

Dead Sea water	75.0% w/w
oleth-20	3.0% w/w
glycereth-26	2.0% w/w
hydroxyethylcellulose	0.8% w/w
vitamin E-acetate (tocopheryl acetate)	0.3% w/w
lavender oil	0.3% w/w
BHA	0.1% w/w
deionized water	to complete up to 100%

**Formula II**

Dead Sea water	50.0% w/w
oleth-20	2.0% w/w
glycerin	3.0% w/w
hydroxyethylcellulose	1.0% w/w
vitamin A-palmitate (retinyl palmitate)	0.2% w/w
patchouli oil	0.2% w/w
BHA	0.1% w/w
deionized water	to complete up to 100%

**Formula III**

Dead Sea water	30.0% w/w
oleth-20	4.0% w/w
glycereth-26	2.0% w/w
hydroxyethylcellulose	0.8% w/w
vitamin E acetate	0.6% w/w
sandalwood oil	0.2% w/w
BHA	0.1% w/w
deionized water	to complete up to 100%

AMENDED SHEET

## Claims

- 1) A gel composition useful for skin care and protection comprising 12 % to 80% w/w Dead Sea water; hydrophobic active agent selected from vegetable oils, free fatty acids and vitamins; and/or hydrophilic active agent selected from humectants,  $\alpha$  - hydroxy acids, anti irritant agents, plant extracts, moisturizing agents and hydrolyzed plant proteins; solubilizers; gelling agents or viscosity modifiers; and deionized water to complete up to 100%.
- 2) A composition according to claim 1 wherein the composition is a clear liquid gel.
- 3) A gel composition according to claim 1 wherein the solubilizer is selected from tween- 20, oleth - 20, tween - 80, ceteth -20 and PEG-hydrogenated castor oils -36,40 and 60 and the gelling agent or viscosity modifier is selected from Guar gum, hydroxyethylcellulose, hydroxypropyl methylcellulose, methylcellulose, magnesium aluminum silicate and xanthan gum.
- 4) A gel composition according to claim 1 further comprising antioxidants and fragrances.
- 5) A gel composition according to the claim 4 wherein the composition contains the following components in weight percent,

Dead Sea water	30.0 - 80.0% w/w
solubilizer	up to 4.0% w/w
hydrophilic active agent	up to 3.0% w/w
gelling agent	0.7 - 1.2% w/w
hydrophobic active agent	up to 0.8% w/w
fragrance	up to 0.4% w/w
anti oxidant	0.05 - 0.2% w/w

and deionized water to complete to 100%.



- 6) A gel composition according to claim 4 wherein the antioxidants are selected from BHA, BHT, tocopherol, tetrasodium EDTA and the fragrance is a synthetic fragrance or an aromatic oil selected from lavender oil, patchouli oil and sandalwood oil.
- 7) A method for the preparation of the composition according to the preceding claims, comprising;
- a) heating the mixture of hydrophobic active agent and solubilizer to approximately 40<sup>0</sup>C while mixing; adding a mixture, at room temperature, of 15%w/w water and 30.0% w/w Dead Sea water, and heating again to approximately 40<sup>0</sup>C while mixing;
  - b) in a different receptacle mixing the remaining water, Dead Sea water and gelling agent and heating to approximately 60<sup>0</sup>C while mixing, cooling to 40<sup>0</sup>C after receiving a clear solution;
  - c) adding the product of step b) to the product of step a) while mixing, and cooling to room temperature.
- 8) A method according to claim 7 wherein step a) further comprises a prior step of adding antioxidants and/or fragrance to the hydrophobic active agent and solubilizer, and step b) further comprises adding the hydrophilic active agent together with the gelling agent and the remaining water and Dead Sea water.

**COMBINED DECLARATION AND POWER OF  
ATTORNEY IN ORIGINAL APPLICATION**

As one of the below named inventors, I hereby declare that:

My residence, post office address and citizenship are as stated below next to our name.

I believe I am an original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**A GEL COMPOSITION FOR SKIN CARE AND PROTECTION AND A METHOD FOR  
PREPARATION THEREOF**

the specification of which

(check one)                      ☐ is attached hereto.

☒ was filed on June 27, 2000 as  
Application Serial No. 09/582,522.  
(if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information known to me to be material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, Section 1.56.

I do not know and do not believe the invention was ever known or used in the United States of America before my invention thereof, or patented or described in any printed publication in any country before my invention thereof or more than one year prior to this application and that the same was not in public use or on sale in the United States of America more than one year prior to this application.

I hereby claim foreign priority benefits under Title 35, United States Code, § 119 of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America as listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed.

PRIOR FOREIGN/PCT APPLICATION(S) AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. § 119:

COUNTRY (if PCT indicate PCT) --	APPLICATION NUMBER	DATE OF FILING (date, month, year)	PRIORITY CLAIMED UNDER 35 USC 119
Israel	122776	28 December 1997	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
			<input type="checkbox"/> yes <input type="checkbox"/> no
			<input type="checkbox"/> yes <input type="checkbox"/> no
			<input type="checkbox"/> yes <input type="checkbox"/> no
			<input type="checkbox"/> yes <input type="checkbox"/> no

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s) or PCT international application(s) designating the United States of America as listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in such prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application:

PRIOR U.S. APPLICATIONS OR PCT INTERNATIONAL APPLICATIONS  
DESIGNATING THE U.S. FOR BENEFIT UNDER 35 U.S.C. § 120

U.S. APPLICATIONS			STATUS (check one)		
U.S. APPLICATION NUMBER	U.S. FILING DATE		PATENTED	PENDING	ABANDONED
PCT APPLICATIONS DESIGNATING THE U.S.					
PCT APPLICATION NUMBER	PCT FILING DATE	U.S. SERIAL NUMBER ASSIGNED (if any)			
PCT/IL/00615	17 Dec 1998				

I hereby appoint the following attorneys, with full powers of substitution and revocation and the power to appoint associate attorneys, to prosecute said application, to receive all documents issued by the U.S. Patent and Trademark Office based thereon, including the original Letters Patent, to pay any and all fees, including maintenance fees, to file for reissues or extensions, to request reexamination, and to otherwise transact all business in the U.S. Patent and Trademark Office connected therewith:

Robert J. Depke (Reg. No. 37,607), Victor S. de Gyrfas (Reg. No. 40,583), Alyssa A. Dudkowski (Reg. No. 40,596), Douglas M. Eveleigh (Reg. No. 43,426), Susan D. Reinecke (Reg. No. 40,198), Robert S. Rigg (Reg. No. 36,991), Deborah Schavey Ruff

(Reg. No. 33,770), Donald W. Rupert (Reg. No. 29,974), Daniel H. Shulman (Reg. No. 45,106) Richard A. Speer (Reg. No. 17,930), Steven G. Steger (Reg. No. 40,185), Wayne L. Tang (Reg. No. 36,028), David M. Thimmig (Reg. No. 36,034), Michael O. Warnecke (Reg. No. 24,345) and William J. Robinson (Reg. No. 29,430) all located at the address shown below.

Direct all telephone calls to Daniel H. Shulman at Telephone No. 312-701-8773.

Address all correspondence to:

Daniel H. Shulman  
MAYER, BROWN & PLATT  
P.O. Box 2828  
Chicago, Illinois 60690-2828

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Inventor's Signature

Zeev Maor

Full Name of First Inventor:

Zeev Maor

Date:

16/7/00

Citizenship:

Israeli

Residence:

Kalva

City, State:

90666 Dead Sea ISRAEL ILX

Post Office Address:

same as above

Inventor's Signature

*Ray*

2-02 Full Name of Second Inventor: Assia Kogan

Date: 14.08.00

Citizenship: Israeli

Residence: Brazil 26

City, State: 96784 Jerusalem ISRAEL ILX

Post Office Address: same as above

Inventor's Signature

Full Name of Third Inventor: Shlomo Magdassi

Date:

Citizenship: Israeli

Residence: Hanerd 36

City, State: 96626 Jerusalem ISRAEL

Post Office Address: same as above

Inventor's Signature

Full Name of Fourth Inventor: Shaul Yehuda

Date:

Citizenship: Israeli

Residence: Mitzpe Shalem

City, State: 86983 Mile Post Dead Sea ISRAEL

Post Office Address: same as above

Inventor's Signature

Full Name of Second Inventor: Assia Kogan

Date:

Citizenship: Israeli

Residence: Brazil 26

City, State: 96784 Jerusalem ISRAEL

Post Office Address: same as above

Inventor's Signature

Full Name of Third Inventor: Shlomo Magdassi

Date: 7/8/00

Citizenship: Israeli

Residence: Hanerd 36

City, State: 96626 Jerusalem ISRAEL ILX

Post Office Address: same as above

Inventor's Signature

Full Name of Fourth Inventor: Shaul Yehuda

Date:

Citizenship: Israeli

Residence: Mitzpe Shalem

City, State: 86983 Mile Post Dead Sea ISRAEL

Post Office Address: same as above

Inventor's Signature

Full Name of Second Inventor: Assia Kogan

Date: \_\_\_\_\_

Citizenship: Israeli

Residence: Brazil 26

City, State: 96784 Jerusalem ISRAEL

Post Office Address: same as above

Inventor's Signature

Full Name of Third Inventor: Shlomo Magdassi

Date: \_\_\_\_\_

Citizenship: Israeli

Residence: Hanerd 36

City, State: 96626 Jerusalem ISRAEL

Post Office Address: same as above

Inventor's Signature

Full Name of Fourth Inventor: Shaul Yehuda

Date: 4.8.2000

Citizenship: Israeli

Residence: Mitzpe Shalem

City, State: 86983 Mile Post Dead Sea ISRAEL

Post Office Address: same as above